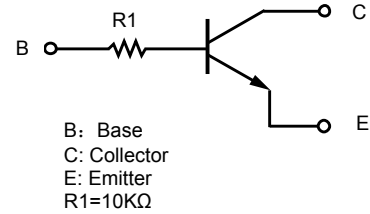


**Feature**

- Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors (see equivalent circuit).
- The bias resistors consist of thin-film resistors with complete isolation to allow negative biasing of the input. They also have the advantage of almost completely eliminating parasitic effects.
- Only the on/off conditions need to be set for operation, making the device design easy.



**Applications**

- Inverter
- Interface
- Driver

**Mechanical Characteristics**

- Lead finish:100% matte Sn(Tin)
- Mounting position: Any
- Qualified max reflow temperature:260°C
- Device meets MSL 1 requirements
- Pure tin plating: 7 ~ 17 um
- Pin flatness :≤3mil

**Structure**

NPN epitaxial planar silicon transistor (Resistor built-in type)

**Electrical characteristics per line@25°C ( unless otherwise specified)**

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Collector-base breakdown voltage	$BV_{CBO}$	$I_C = 50\mu A$	50			V
Collector-emitter breakdown	$BV_{CEO}$	$I_C = 1mA$	50			V
Emitter-base breakdown voltage	$BV_{EBO}$	$I_E = 50\mu A$	5			V
Collector cutoff current	$I_{CBO}$	$V_{CB} = 50V$			0.5	$\mu A$
Emitter cutoff current	$I_{EBO}$	$V_{EB} = 4V$			0.5	$\mu A$
Collector-emitter saturation	$V_{CE(sat)}$	$I_C/I_B = 5mA/0.25mA$			0.3	V
DC current transfer ratio	$h_{FE}$	$I_C = 1mA, V_{CE} = 5V$	100	250	600	-
Input resistance	$R_1$	-	7	10	13	k $\Omega$
Transition frequency	$f_T$	$V_{CE} = 10V, I_E = -5mA,$		250		MHz

Absolute maximum rating@25°C

Rating	Symbol	Value	Units
Collector-base voltage	$V_{CBO}$	50	V
Collector-emitter voltage	$V_{CEO}$	50	V
Emitter-base voltage	$V_{EBO}$	5	V
Collector current	$I_C$	100	mA
Collector power dissipation	$P_C$	150	mW
Junction temperature	$T_j$	150	°C
Storage temperature	$T_{stg}$	-55 to +150	°C

Typical Characteristics

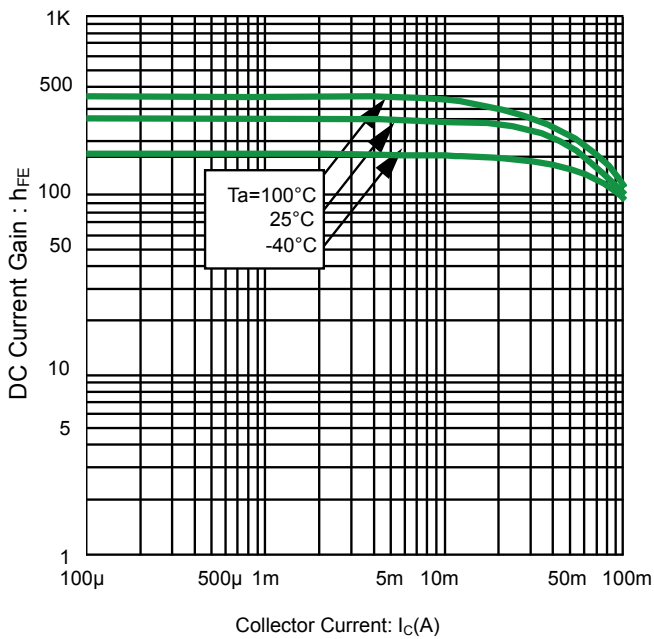


Fig 1.DC current gain vs. collector current @  $V_{CE}=5V$

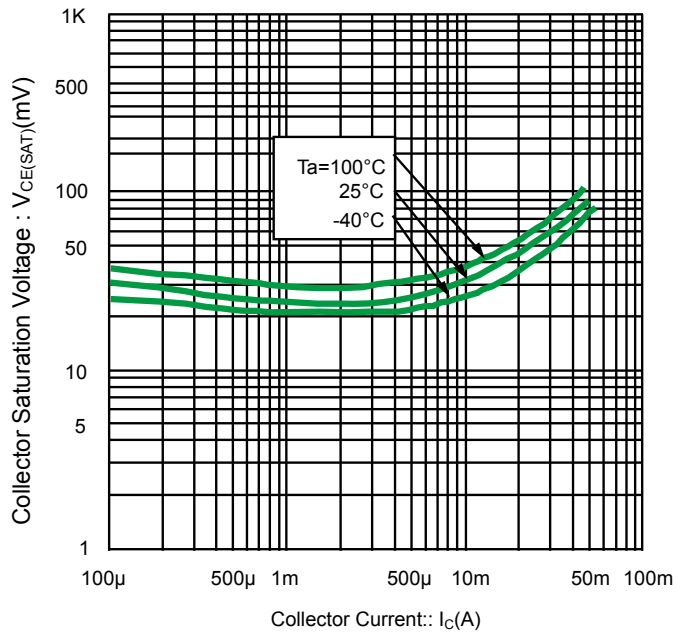
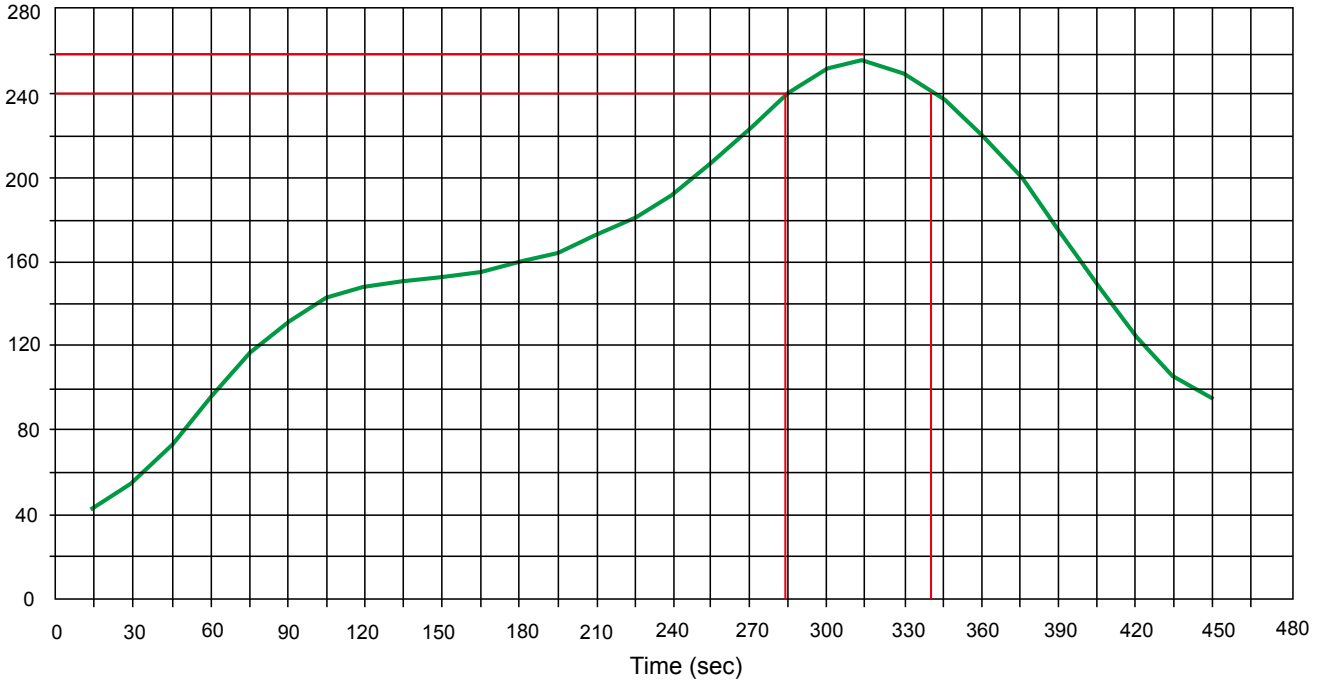


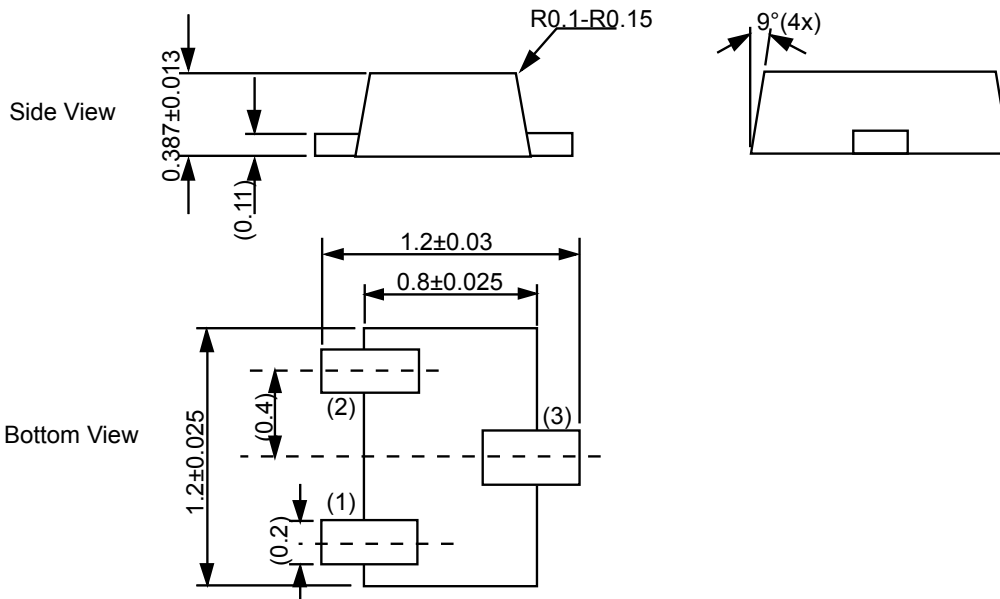
Fig 2.Collector-emitter saturation voltage vs. collector current @  $I_C/I_B=10$

Solder Reflow Recommendation

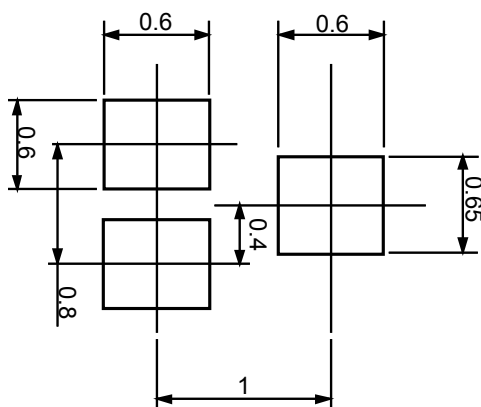
Peak Temp=257°C, Ramp Rate=0.802deg. °C/sec



Product dimension (SOT-723)



Unit: mm




Unit: mm

**Ordering information**

Device	Package	Shipping
PDTC114TM	SOT-723 (Pb-Free)	8000 / Tape & Reel


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